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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/824,901
Filing Date: April 14, 2004
Appellant(s): WINARSKI ET AL.

Stephen A. Terrile
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on April 30, 2008 appealing from the Office action mailed on July 2, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|--------------|---------|--------|
| 2002/0035665 | Basham | 3-2002 |
| 6,018,789 | Sokolov | 1-2000 |
| 2004/0111485 | Mimatsu | 6-2004 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 13, 14, 19, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Basham.

As per claims 13 and 21, Basham teaches a data storage device comprising:
a data storage media for storage of data (cartridge 150; see figure 1);
a processor for controlling said data storage device (controller 106; see figure 1);
a WORM pointer memory coupled to said processor for storage of a WORM pointer (write append limiter 151; see figure 1), said WORM pointer providing an inventory of locations where WORM data can be written within said data storage media (the areas past the pointer can be written to; see paragraph 11, lines 12-16);
a host device interface coupled to said processor for receiving commands from a host computer (interface 109; see figure 1).

Basham also teaches a data storage system with a host computer (host 102; see figure 1) and the data storage device.

As per claims 14 and 22, Basham teaches executing the write command to write data as WORM data on the data storage device (see paragraph 34, lines 12-14; and paragraph 49, lines 3-6).

As per claim 19, Basham teaches the WORM pointer memory located inside a sealed portion of the data storage device (the write append limiter is a part of the cartridge; see figure 1).

Claims 1-5, 15, and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham (US PGPub 2002/0035665) in view of Sokolov (US 6,018,789).

As per claims 1 and 24, Basham teaches a method for writing data on a data storage device and an article of manufacture storing instructions for a method comprising the steps of:

said data storage device receiving a write command (step 406, and paragraph 47, lines 12-13);

obtaining a starting LBA from said write command (see paragraph 48, line 14);

obtaining a first WORM pointer (write append limiter 151) from a WORM pointer memory (see paragraph 28), said WORM pointer providing an inventory of LBAs where WORM data can be written within said data storage media ((the areas past the pointer can be written to; see paragraph 11, lines 12-16);

in response to said starting LBA being greater than or equal to said WORM pointer, executing said write command (see paragraph 49, and paragraph 11, lines 12-16).

Basham does not teach the write command including a LBA transfer length for the method to obtain. Sokolov teaches a data transfer request including a starting LBA and a transfer length. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art for the method taught by Basham to use a write command that includes a starting LBA and a LBA transfer length so they system can know how much data is in the transfer request.

As per claims 15 and 23, Basham teaches the data storage device and data storage system as applied in the rejection to claims 13 and 21 above. Basham does not teach the write command including a LBA transfer length for the method to obtain. Sokolov teaches a data transfer request including a starting LBA and a transfer length. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art for the device taught by Basham to use a write command that includes a starting LBA and a LBA transfer length so it can know how much data is in the transfer request.

As per claims 2 and 25, Basham teaches executing the write command to write data as WORM data on the data storage device (see paragraph 34, lines 12-14; and paragraph 49, lines 3-6).

As per claims 3 and 26, Basham teaches aborting the write command in response to the starting LBA being less than the first WORM pointer (see paragraph 52, line 14).

As per claims 4 and 27, Basham updating the WORM pointer after the write command has executed (see paragraph 57). Basham does not teach calculating a second WORM pointer that is equal to the numerical sum of the first WORM pointer and the transfer length and storing the second WORM pointer in the WORM pointer memory. Sokolov teaches the use of a write transfer length as applied in the rejections above. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to update the WORM pointer by generating a second WORM pointer that is equal to the sum of the first WORM pointer and the write transfer length

This new sum represents the end of the previous WORM data plus all the data written during the write transfer. It would then be obvious to store this new WORM pointer in the WORM memory since it represents the new collection of all the WORM data.

As per claims 5, 20, and 28, the combination of references teaches the method of updating the WORM pointer as claimed. Basham also teaches the use of a time stamp with the WORM pointer (see paragraph 49, line 20). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to include a date stamp with the WORM pointer so the system can know when the WORM data was last written to.

Claims 6-8, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham in view of Sokolov and further in view of Gill (US 6,469,854).

The combination of Basham and Sokolov teach the method for writing data to a data storage device as applied in the rejections to claims 1 and 24 above. The references do not teach rewriting the data in response to determining that the write command executed with at least one error. Gill teaches detecting a write error and rewriting the data to the same address (see column 1, lines 42-44). As per claims 6, 7, and 29, it would have been obvious at the time the invention was made to a person of ordinary skill in the art for the method to rewrite the data at the starting LBA in response to determining that the write command executed with an error so that the write command can be retried and executed without error. As per claims 8 and 30, Gill teaches writing an indication of the error into the storage (see column 5, lines 56-58). It

would have been obvious for the rewriting to begin at an LBA greater than the starting LBA so that the error indication data can be written at the starting LBA. This would allow the system to determine what type of writing error occurred when the data is read later.

Claims 9, 10, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham in view of Sokolov and further in view of Mimatsu (US PGPub 2004/0111485).

The combination of Basham and Sokolov teach the method for writing data to a data storage device as applied in the rejections to claims 1 and 24 above. The references do not teach sending a device type to the host computer in response to receiving a first inquiry and sending the WORM pointer in response to receiving a second inquiry. Mimatsu teaches sending device type information in response to an inquiry command so the system can know what type of storage device is being used and configure the system appropriately (see paragraph 51, lines 9-12). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to send the device type information to the host in response to a first inquiry so that the host can configure the system appropriately and to send the WORM point in response to the second inquiry after the system has been configured.

Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basham in view of non-volatile memory ("Non-volatile Memory chips" NPL).

As applied in the rejection to claim 13 above, Basham teaches the data storage device with a WORM pointer memory. Basham also teaches the WORM pointer memory being part of a cartridge for the data storage media (see paragraph 28). Basham does not teach the WORM pointer memory being an EPROM, PROM, or FLASH. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to store the WORM pointer memory in a nonvolatile storage on the cartridge so that the pointer can be accessed without having to read the actual storage media. The non-patent literature teaches that it was well known at the time the invention was made to use EPROM, PROM, and FLASH memory as different forms of nonvolatile storage. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have the WORM pointer memory be either an EPROM, PROM, or FLASH memory since any would offer the benefits of the nonvolatile storage in combination with the cartridge taught by Basham.

(10) Response to Argument

Appellant's first point of argument is that Basham does not teach a "WORM pointer." Appellant has not provided any limitations in the claim or any arguments that would distinguish the claimed "WORM pointer" from the append limiter taught by Basham. Because the Examiner is required to give the broadest reasonable interpretation to the claim language, the Examiner contends the append limiter taught by Basham is a "WORM" pointer as it points to an area in the storage media where data is designated as WORM and therefore unchangeable and another area where data can

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still be written to. Furthermore, this WORM pointer provides an inventory of locations where WORM data can be written because all regions after the append limiter can be written to and thus can be considered “an inventory of locations where WORM data can be written.”

Appellant also argues that the combination of Basham, Sokolov, and Mimatsu does not teach receiving a first inquiry command from a host computer and sending a device type to the host computer as required by claims 9 and 31. In response, Examiner points out that the referenced section of Mimatsu applied in the rejection above teaches device type information being sent in response to an inquiry command. Therefore, it would have been obvious to combine this teaching with the teachings of Basham and Sokolov that the host can configure the system appropriately and to send the WORM point in response to the second inquiry after the system has been configured. This would teach the limitations of the claim.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Daniel Tsui/

Examiner, Art Unit 2185

Conferees:

/Sanjiv Shah/

Supervisory Patent Examiner, Art Unit 2185

/Manorama Padmanabhan/

QAS, TC2100, WG2180